

Instructions for testing and preparation of the substrate and for System selection before installing a Plastifloor® coating

Before installing a Plastifloor® coating, there are numerous important questions to be resolved to ensure that the new floor can be properly installed and then preserved in the long run. In addition to testing the substrate for its coating ability, choosing the right coating system increases its durability. Ultimately, the subsequent cleaning and care is crucial for your long-term enjoyment of a new Plastifloor® floor.

The requirements must be met :

- What properties does the client /user requires on their new floor?
- Are the conditions such as strength, adhesion, (residual) moisture and evenness given?
- What is the load capacity of the substrate to be coated?
- What is the most suitable Plastifloor® flooring system?
- Which slip resistance class does the BG stipulate on the ground of the coated area?

Examination of the Substrate Strength

Several conditions are required to be measured before coating the substrate: sufficient strength, because coatings and coverings made with Plastifloor® resins, despite their high intrinsic strength, cannot perform a load-distributing function due to their thickness layer, especially if the installation of a membrane is not required/wanted by customer. The compressive strength of concrete and compound screeds can be conveniently determined with the bounce hammer (Schmidt's Hammer). The surface hardness can be tested by scratching with a steel nail or by the tear test with the Herion device. The compressive strength should be at least 25 N / mm² for industrial floors; the adhesion strength at least = 1.5 N / mm². Only if both parameters are met by the substrate a durable floor coating is possible to install.

Bonding Strength

Before starting the work on the cleaned surfaces, a sufficient number of sampling must be applied at different locations. Adhesive tensile testing devices (for example Schenk-Trebel, Herion) have proved their worth. We recommend Plastifloor® 112 as an adhesive for the adhesive punches. If no test device is available, it is recommended to carry out at least a quick test. This is done with Plastifloor® 112, which is mixed with hardener powder 50W. With half of the resin, the substrate to be tested is first primed to form a film. Mix the remaining amount of resin with sand (0.7-1.2 mm), a still flowable mortar is layered in about 3 mm thickness and applied to about half of the primed surface. After tack-free hardening, hand samples are struck with a hammer and chisel. The surface of the substrate must adhere to the entire surface of the reaction resin layer and have a grain breakage in the upper zone of the substrate. The primed surface must be tack-free and not to be removed by scratching with a knife or screwdriver.

Moisture Test

Cement screeds and concrete surfaces can only be coated after curing if they have a moisture content of approx. 3%. This is usually after 28 days of applying a new concrete. There are limitations on the possible attainable indoor humidity under certain climatic conditions (e.g., subtropical to tropical conditions). In addition, the substrate must be sufficiently resistant to groundwater and rising damp (capillary moisture) e.g. be sealed by a gravel filter layer or horizontal barrier (foil). Barrier concrete (WU-concrete) and barrier screed are not moisture proof because they are vapor permeable. Moisture measurements can be made using a Darr test, CM device and suitable electronic measuring devices. However, the CM device provides the most reliable values. Rising

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moisture can be tested by masking a 1 m² surface with a dense polyethylene film. If the taped surface turns dark within 24 hours due to the formation of condensate, then rising moisture is to be expected. If this is the case use Plastifloor 118 primer for wet substrate, if there is a pressing water behind or below the substrate Plastifloor® floor coatings can only be applied if a Plastistone® 127 vapor barrier is installed first. If there is an on-site vapor barrier, but the substrate still has a higher household moisture content more than 3%, Plastifloor® 113 is used as a primer, with residual moisture > 10% use Plastifloor® 118.

Levelling

Thin reactive resin coatings cannot compensate the unevenness of the substrate. Unevenness can be compensated by filling with Plastifloor® 510 + B2 or C2 mortar mixtures. The regulations of DIN EN 18202: 2013/04 must be observed and agreed with the client as to what should be done if these requirements are exceeded in the substrate in order to rule out later complaints.

Slope

To repair an incorrect slope of the screeds the resins are usually not sufficient. This action requires a separate operation. With the Plastifloor® mortar system 050/051 complete synthetic resin screed layers can be newly installed, which can be further coated immediately after hardening.

Contamination

Plastifloor® synthetic resins have little or no adhesion to soiled surfaces. Therefore, depending on the type of contamination, dry or wet must be cleaned to complete open porosity. Oily and greasy surfaces must be cleaned using special cleaners when using scrubbing machines, high-pressure lamps and flame blasting. Flame spraying is recommended for cleaning substrates contaminated with chemicals and substrates treated with evaporation retardants. Substrates stained with paint, bitumen or tar are thoroughly cleaned by milling or blasting before the new Plastifloor® flooring can be laid.

Soft and Removable Contamination

Cement slurries, cement shells, mortar or paint residues and any surface components that do not adhere firmly and permanently to the substrate must be completely removed before priming- milling, blasting or sanding is needed to ensure good adhesion of the new Plastifloor® flooring.

Substrate Absorption

In order for the primer to become firmly bonded with the concrete or mortar surfaces, it must be able to penetrate into the capillary / pore structure of the substrate, which must be suitably absorbent. Particularly high absorbency of the substrate indicates low strength. It is therefore essential to saturate it with Plastifloor® 114 before priming.

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Cracks

For cementitious substrates, net-like surface cracks have no adverse effect on resin applications; However, it is to be expected with an excess consumption of primer resin. Long term closing up of the cracks should be penetrated with Plastifloor® 114 and closed with Plastifloor 112/118 if the closure of the substrate is completed. Settlement cracks and other cracks caused by building movements are generally not bridged by synthetic resin floors; they have to be re-shed on a case-by-case basis.

Holes

Even joints with low tendency to move must be taken over. They should be straight, uniform in width and have solid joint flanks. Damage to the joint edges must be repaired with Plastifloor 050/051, and the joint can be cast with Plastifloor® 430 after inserting a joint round cord. Passable joints are to be formed with profiles to ensure that the joint flank is reinforced.

Rigid joints can in most cases be filled and overcoated with Plastifloor 510 Mortar after priming. Construction expansion joints must not be filled and overcoated! Here we generally recommend installation of suitable metal joint profiles.

Cavities

Hollow surfaces, especially those that show cracks, should be exposed, primed with Plastifloor 112/118 and then backfilled with Plastifloor® 510 + B2 / C2 mortar mixture.

Concrete

Cement concrete generally has a layer of fine mortar (cement slurry) on its surface which, because of its low strength and low adhesion to the substrate, must be removed before any new floor coating. Depending on the condition of the substrate, the appropriate methods are: milling, grinding, sandblasting, shot blasting or flame blasting

Cement Screed

Cement, especially hard-material screeds, can have such a dense surface that primers can hardly penetrate. This surface must e.g. be made open-pore by shot peening. For cement screeds, remove the vinas by milling or blasting. Hard material screeds should be roughened by shot blasting. It is important to pay attention to a pore-closed primer. By slightly sprinkling the wet primer with quartz sand 0.6 - 1.2 mm, it is possible to check very well after hardening whether re-priming is necessary. If the priming made with Plastifloor® 112/113/116/118 forms a shiny, pore-closed layer and if the interspersed sand cannot be rubbed off by hand, it can be further coated. If, on the other hand, the surface is partly dull and the strewn sand can be rubbed off, this indicates an insufficient primer, it must be re-primed!

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Anhydrite and magnesite screeds

Anhydrite and magnesite screeds are not moisture resistant. For coatings made of Plastifloor® resins that are impermeable to water vapor, backwashing and moisture penetration by adjacent components must be excluded with certainty. The risk that not only the coating dissolves in case of imperfect sealing, but that these screeds are destroyed even in their upper zones.

Water vapor impermeable coverings on anhydrite and magnesite screed have not been proven in practice.

Mastic asphalt

Mastic asphalt screeds should only be coated indoors because of their considerable reactivity to temperature changes. Coatings should only be carried out with flexible Plastifloor® resins such as Plastifloor® 332 or Plastifloor® 800, as mastic asphalt may deform or lose strength under load and under changing temperatures. The examination of the adhesion and the strength of the substrate is mandatory.

Ceramic coverings

Ceramic coverings must be firmly connected to their substrate. In order to achieve sufficient adhesion on ceramic coverings with Plastifloor® resins, their surface must be pre-treated by mechanical roughening (for example sandblasting or diamond grinding) (adhesion test necessary!). Ceramic substrates should be primed with Plastifloor® 418 with the addition of the bonding agent HP. Beware of possible trapped moisture in joints or under tiles! This moisture can later lead to vapor pressure and blistering as well as complete detachment of the new Plastifloor® flooring. Moistened substrates must be dried before coating by suitable measures or vapor pressure equalization layers must be provided, if necessary primed with Plastifloor® 118.

Metal

Plastifloor® 332 has to be used for this purpose, with the addition of the bonding agent HP. Metal substrates should only be coated with flexible synthetic resins such as Plastifloor® 332 (inside) or Plastifloor® 800 (outside, TK)..

Various methods for substrate pre-treatment

Suitable substrates for laying a new Plastifloor® floor are concrete, cement screed, asphalt (indoor only) ceramic tiles; wood, fiberboard, cement boards and steel structures. The substrate must be dry, stable and free of separating or volatile substances such as chemicals, grease and oil. The substrate to be coated must be finished by diamond grinding, milling or shot peening before the start of the coating work, and then cleaned dust-free with an industrial vacuum cleaner before starting the coating work. The instructions given in the product data sheets and our instructions for testing the surfaces to be coated must be followed.

Selecting a suitable coating system and detailed processing instructions can be found in the individual product data sheets:

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Depending on the nature of the substrate and the requirements of the client / user, the individual Plastifloor® resins can be combined to the load capacity of the new floor. This combination is always object-specific:

substrate: Concrete? Screed? Wood?

Yes:	porous / highly absorbent	Plastifloor® 114* as a pore filler
Dry?	Yes ->	Plastifloor® 112* Primer
	No, < 5% ->	Plastifloor® 113* Primer
	No, >5% ->	Plastifloor® 118
No:		
Metal?	Yes ->	Plastifloor® 332* adhesive agent HP Primer
Ceramic?	Yes ->	Plastifloor® 418* adhesive agent HP Primer
Asphalt?	Yes ->	Plastifloor® 116*
Cracks?		
	Yes fine Cracks->	Plastifloor® 114* as a Crack sealer und as a pore filler

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	As for R12- R 13		or Broadcasted 1: 1 with s / l filler and with coloured quartz sand Size 0.4 - 2.0 mm
	Exterior		Plastifloor® 800 * With quartz sand or broadcast with colored quartz sand / granite 0.4 -2.0 mm
Forklift Traffic?	Yes	->	min. 4 mm Thickness!
Pedestrian / rubber wheels	Yes	->	mind. 2 mm Thickness!

Choose the right sealer:

Dry, inside, smooth	Yes	->	Transparent Coloured Matt? -> Yes 2. Sealer	Plastifloor 522*, clear + Colour Paste use Hardener / M
Wet, non-slip, thermal load	Yes	->	Transparent Coloured Matt? -> Yes 2. Sealer	Plastifloor® 526*, clear + Colour Paste use Hardener/M
Increase chemical resistance	Yes	->	use Plastifloor 523 additive (5%)	
Increase thermal resistance	Yes	->	use Plastifloor 527 Additive (5%)	
Outside/TK	Yes	->	Transparent Coloured Matt? -> 2. Sealer	Plastifloor® 528* + Colour Paste use hardener/M
Heavy load with solvents	Yes	->	Transparent	Plastipur® 570

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Yes -> Coloured Plastipur® 472

Use Plastipur® Polyaspartic sealings only on broadcasted surfaces.

Light load / glossy seal desired?

Yes -> Transparent Plastipur® 560 clear

Joint gaps flexible Inside Plastifloor® 430*
Outside Plastifloor® 800*

drivable Joints Use metal profiles

Install Coves Plastifloor® 540/H*
1:3 with color quartz sand
0,4-2,0 mm

Separation between wall and floor ? -> Install two-piece profile system

Dilute resins? Only at temperatures around 0 ° C -> Plastifloor® 440*

Working below 0 ° C? yes -> with accelerator B 101, except for sealers. read product data sheet!

Clean tools -> Use Plastifloor cleaner (MMA)

